



# LED Manual

pan & shutter – the peanut



**gent360 LED** cleverly combines **gent360 PAN** and **gentred SHUTTER** to give automatic shutter release and camera pan in one package. Use *the peanut* to build a lightweight rig, without radio control, that automatically takes pictures (5 to 35 secs) & pans the sky simultaneously.

You will need a camera cradle with a pan servo modified for endless rotation (see [www.KAPER.us/basics/Bas\\_360\\_R.html](http://www.KAPER.us/basics/Bas_360_R.html)). For rig kits and ideas see [www.brooxes.com](http://www.brooxes.com) and [www.kapshop.com](http://www.kapshop.com).

## Operation

The pinout is shown right- note the TYPE number written at the top, e.g. **301**. Connect **+ve** & **-ve** to a 3 to 5.5V supply (a standard RC servo lead can be used). The servo uses high currents, a button cell is not suitable –

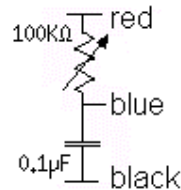
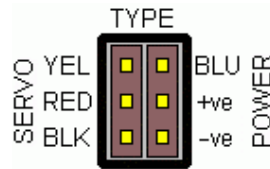
Two or three AA or AAA cells are recommended. Connect the modified servo to **YEL/RED/BLK**, taking care to match the colours. Finally locate the main body of the device so it can “see” the camera’s IR receiver.

The servo will turn 30° and the IR triggers a picture every 10 seconds with the BLU pin connected to **-ve**. 5 secs with BLU pin is connected to **+ve**.

**IMPORTANT NOTE:** Please be careful with the servo and battery connections! The unit will survive inverting the connections, but may not survive connections misplaced by one pin!

## For Advanced Users

Timing can be continuously varied from 5 to 35seconds by adding the two components shown on the right instead of connecting blue directly to the red or black.



You do not need to switch off and on to change the timing; the new delay will be adopted from the start of the next period, or if you have a variable resistor connected, proportionately during the current period.

Small changes in the 30° rotation angle per picture can be achieved by adjusting the trimmer in the modified pan servo. You can stop the servo rotation if necessary by unplugging it!

## Specification

Supply Voltage	3 to 5.5V. IR Range will reduce below 4V. (absolute maximum voltage, 6.5V)
Supply Current	Maximum 25mA pulses when LED activated, plus the current used by the servo.
Operating Range	500mm, with unit facing camera receiver, range decreases if located obliquely to receiver.
Timer Operation	5 or 10 seconds and 5 - 35 seconds variable.
Weight	1.2 grams.

## Diagnostics

Make sure that the camera IR is activated. This is often controlled via the shutter or timer control – read the camera manual.

Use the 5s delay time to make fault diagnosis easier. Remember some cameras may take several seconds to take another picture. For example, the camera may appear to take a picture every 10 seconds when the IR signal and servo pulse is being transmitted every 5 seconds.

If all else fails, use a digital camera as an IR detector (yes, most digi-cams can detect IR: check it with any remote control). The **gent360** is visible (if a little fainter than the remote) through the camera LCD display.

For servo issues, make sure the servo has been modified for 360°.